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The effects of addition of mononucleotides on Sma nuc endonuclease activity

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Abstract

Examination of the effects of mononucleotides on Sma nuc endonuclease originated from Gram negative bacterium Serratia marcescens displayed that any mononucleotide produced by Sma nuc during hydrolysis of DNA or RNA may regulate the enzyme activity affecting the RNase activity without pronounced influence on the activity towards DNA. The type of carbohydrate residue in mononucleotides does not affect the regulation. In contrast, the effects depend on the type of bases in nucleotides. AMP or dAMP was classified as a competitive inhibitor of partial type. GMP, UMP, and CMP were found to be uncompetitive inhibitors that suggest a specific site(s) for the nucleotide(s) binding in Sma nuc endonuclease.

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